

## CLAIMS

*Sub a 2*

1. Method of controlling the operation of the approach system of a paper machine, a paper board machine or the like web formation apparatus, in which method a stock is formed from white water, fiber suspension and fillers, said pulp is fed by means of a mixing pump into a gas separation tank, gas is separated from said pulp and the essentially gas-free pulp is fed into the head box of the production machine, whereby the feed of the head box feed pump is changed as the production of the web formation apparatus changes, characterized in that the change in the production of the web formation apparatus is arranged to initiate the regulation system of the approach system, which regulation system essentially simultaneously checks the need for changing the operational mode of the mixing pump, initiates the change of the operational mode of the mixing pump according to said need and both guides and regulates the head box feed pump.
2. Method according to claim 1, characterized in that the regulation system of the approach system is utilized to control both the head box pressure and the surface level of the gas separation tank.
3. Method according to claim 1, characterized in that the operating point of the feed pump and the mixing pump are changed essentially simultaneously.
4. Method according to claim 1, characterized in that the operating point of the mixing pump is changed anticipatorily in relation to the changing of the operating point of the feed pump so that the surface level in the gas separation tank located between said pumps remains essentially constant or changes in a controlled manner.
5. Method according to claim 1, characterized in that the change of the head box pressure is readable from the change of the operating point of the

head box feed pump, whereby said change of the operating point of the feed pump initiates the control function of the regulation system.

6. Method according to claim 2, characterized in that the surface level of the gas separation tank is controlled by arranging the change of the head box pressure to initiate the control function of the regulation system.

7. Method according to claim 6, characterized in that the regulation system guides simultaneously both the feed pump and the mixing pump so that the pressure in the head box remains constant and the surface level in the gas separation tank remains constant or changes in a controlled manner.

8. Method according to claim 6, characterized in that the regulation system controls the mixing pump anticipatorily in relation to the feed pump so that the head box pressure and the surface level in the gas separation tank remain constant.

9. Method according to claim 1, characterized in that by means of the regulation system at least the output of the head box feed pump is changed in order to keep the pressure in the head box of the production machine constant, the surface level variation in the gas separation tank is monitored simultaneously and measures are taken if needed to correct the surface level of pulp in the gas separation tank.

25 10. Method according to claim 1 or 2, characterized in that said surface level is allowed to change slowly in the gas separation tank temporarily without changing the feed of the gas separation tank.

30 11. Method according to claim 1, characterized in that when the pressure of the head box changes slowly the change of the pressure is compensated only by changing the capacity of the head box feed pump, whereby the surface level of the gas separation tank is allowed to change accordingly.

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12. Method according to claim 1, characterized in that when the pressure of the head box changes fast, the change of the pressure is compensated by changing essentially simultaneously both the capacity of the head box feed pump and the capacity of the mixing pump.

13. Method according to claim 1, characterized in that in a grade change situation the capacity of both the mixing pump and the feed pump is changed stepwise.

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14. Method according to claim, characterized in that said surface level regulation is controlled by means of fuzzy logic.

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